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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/966,914

09/27/2001

Sehat Sutardja

MP0115

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03/19/2003

MARVELL SEMICONDUCTOR, INC.
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

WILLIAMS, ALEXANDER O

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,914

Applicant(s)

SUTARDJA

Examiner

Alexander O Williams

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6, 10, 17, 18, 21 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 to 4, 7, 8, 11 to 16, 19, 20, 22 to 25, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/25/02 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Serial Number: 09/966914 Attorney's Docket #: MP0115

Filing Date: 9/27/01;

Applicant: Sutardja

Examiner: Alexander Williams

Applicant's Letter in Paper # 13, filed 1/22/03 has been acknowledged.
Applicant's Amendment in Paper No. 12, filed 11/25/03 is acknowledged.

This application contains claims 5, 6, 9, 10, 17, 18, 21 and 26 drawn to an invention non-elected without traverse in Paper No. 5.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 to 4, 7, 8, 11 to 16, 19, 20, 22 to 25, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Degani et al. (Japan Patent Application # 08-036034). This can also be seen in figure 7A of Kimura (U.S. Patent Application # 2002/0175421A1).

For example, in claim 1, Degani et al. (**figures 1 to 12**) specifically figure 1 shows an integrated chip package, comprising: at least one semiconductor chip **19,20** having a first surface and a second surface; an intermediate substrate **18** electrically coupled via conductive bumps **26** to the first surface of the least one semiconductor chip; a package substrate **12** having a first surface electrically coupled to the intermediate substrate via a plurality of bonding wires **22**; and a heat sink **30** thermally coupled to the second

surface of the semiconductor chip so that heat generated from the at least one semiconductor chip flows towards the heat sink.

Claims 1 to 4, 7, 8, 11, 13 to 16, 19, 20, 22 to 25, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurokawa (U.S. Patent # 5,291,064).

For example, in claim 1, Kurokawa (**figures 1 to 7**) specifically figure 6 how an integrated chip package, comprising: at least one semiconductor chip **42** having a first surface and a second surface; an intermediate substrate **41a,41b** electrically coupled via conductive bumps **43** to the first surface of the least one semiconductor chip; a package substrate **47** having a first surface electrically coupled to the intermediate substrate via a plurality of bonding wires **46**; and a heat sink **45** thermally coupled to the second surface of the semiconductor chip so that heat generated from the at least one semiconductor chip flows towards the heat sink.

Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurokawa (U.S. Patent # 5,291,064) in view of Degani et al. (U.S. Patent # 5,869,894).

Kurokawa show the features of the claimed invention detailed above, but fail to explicitly show a support material arranged between the package substrate and the intermediate substrate.

Degani et al. is cited for showing a RF IC package. Specifically, Degani et al. (**figures 2 and 3**) discloses a semiconductor chip **13** having a first surface and a second surface; an intermediate substrate **14** electrically coupled via conductive bumps **16** to the first surface of the least one semiconductor chip; a package substrate **19** having a first surface electrically coupled to the intermediate substrate; and a support material arranged between the package substrate and the intermediate substrate for the purpose of preventing chips noise problems that frequently arise due to interconnects that are long or ineffectively placed.

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Therefore, it would have been obvious to one of ordinary skill in the art to use Degani et al.'s support material to modify Kurokawa's package for the purpose of preventing chips noise problems that frequently arise due to interconnects that are long or ineffectively placed.

Response

Applicant's arguments filed 11/25/02 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

The insertion of Applicant's additional claimed language, for example, "in claims 1, 13 and 22" cause for further search and consideration to make this action final.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

The listed references are cited as of interest to this application, but not applied at this time.

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Field of Search	Date
U.S. Class and subclass: 257/686,685,723,777,778,737,738,734,712,704,710,717,7 20,532,724,728,725	7/26/02 3/2/03
Other Documentation: foreign patents and literature in 257/686,685,723,777,778,737,738,734,712,704,710,717,7 20,532,724,728,725	7/26/02 3/2/03
Electronic data base(s): U.S. Patents EAST	7/26/02 3/2/03

Papers related to this application may be submitted to Technology Center 2800 by facsimile transmission. Papers should be faxed to Technology Center 2800 via the Technology Center 2800 Fax center located in Crystal Plaza 4-5B15. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center 2800 Fax Center number is (703) 308-7722 or 24. Only Papers related to Technology Center 2800 APPLICATIONS SHOULD BE FAXED to the GROUP 2800 FAX CENTER.

Any inquiry concerning this communication or any earlier communication from the examiner should be directed to ***Examiner Alexander Williams*** whose telephone number is **(703) 308-4863**.

Any inquiry of a general nature or relating to the status of this application should be directed to the ***Technology Center 2800 receptionist*** whose telephone number is **(703) 308-0956**.

3/18/03



Primary Examiner
Alexander O. Williams